

ABSTRACT OF THE DISCLOSURE

A method and system for conveying an arbitrary mixture of high and low latency traffic streams across a common switch fabric implements a multi-dimensional traffic classification scheme, in which multiple orthogonal traffic classification methods are successively implemented for each traffic stream traversing the system. At least two diverse paths are mapped through the switch fabric, each path being optimized to satisfy respective different latency requirements. A latency classifier is adapted to route each traffic stream to a selected path optimized to satisfy latency requirements most closely matching a respective latency requirement of the traffic stream. A prioritization classifier independently prioritizes traffic streams in each path. A fairness classifier at an egress of each path can be used to enforce fairness between responsive and non-responsive traffic streams in each path. This arrangement enables traffic streams having similar latency requirements to traverse the system through a path optimized for those latency requirements.

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